

REMARKS

Claims 1-51 are pending in the application.

Claims 17-24 and 41-48 are withdrawn from consideration.

Claims 1-16, 25-40 and 49-51 are rejected.

Claims 1-16, 25-40 and 50-51 are rejected under 35 U.S.C. 103(a).

Claim 49 is rejected under 35 U.S.C. 103(a).

Claims 1, 25, 49, and 50 are amended. Claims 16 and 28 are cancelled.

No new matter is added.

Claims 1-15, 25-27, 29-40, and 49-51 remain in the case for consideration.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Claim Rejections – 35 U.S.C. 112

Claim 1 recites the limitation “said cylindrical insulator.” There is insufficient antecedent basis for this limitation.

Claim 1 is amended to consistently recite “cylindrical insulating layer.”

Claim Rejections – 35 U.S.C. 103(a)

Claims 1-16, 25-40 and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP404302406 (“JP ‘406”), newly cited, in view of Sundaram et al. 5,372,967 (“Sundaram”) and Lue 5,863,806 (“Lue”), previously cited.

Applicant respectfully traverses the rejections.

Independent claim 1 is amended to clarify the path of the underlying conductive layers. Claim 1 as amended recites that the underlying conductive layers are formed slantly longitudinally in the groove. Support for this is found in many of drawings of the present application including FIGS. 6B and 8B and in the specification at page 6, lines 24-26, and at page 7, lines 31-32.

All of the art cited by the Examiner disclose lower conductive lines formed in a direction 90 degrees to the longitudinal shape of each structure. First, in Sundaram, FIGS. 3-5 all show conductor lines 18 formed in the rectangular trench to be configured in a direction 90 degrees to the longitudinal shape of the rectangular trench. Second, in Lue, FIG. 1 shows the path between each first ohmic contact region 42an and second ohmic contact 42bn to be

straight across each field diffusion region in a direction 90 degrees from the longitudinal shape of field oxide region 38. Finally, in JP '406, FIG. 2 shows lower layer wiring 3 to be formed in a direction 90 degrees from the longitudinal direction of deep groove 2.

Consequently, the combination of JP '406, Sundaram, and Luc fails to disclose each and every element of amended independent claim 1. Thus, claim 1 is believed to be allowable and the applicant respectfully requests allowance of this claim.

Claims 2-15 all depend from independent claim 1, and for at least the same reasons these claims are believed to be allowable and the applicant respectfully requests allowance of these claims.

Independent claims 25 and 50 are amended similarly to claim 1 to clarify the path of the underlying conductive layers. The claims as amended recite that the underlying conductive layers are formed slantly longitudinally in the groove. For at least the reasons given for claim 1, amended independent claims 25 and 50 are believed to be allowable and the applicant respectfully requests allowance of these claims.

Claims 26-27 and 29-40 depend from claim 25 and claim 51 depends from claim 50, and for at least the reasons given for claims 25 and 50, these dependent claims are believed to be allowable and the applicant respectfully requests allowance of these claims.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '406, newly cited, in view of Yamada et al. 6,236,538 ("Yamada") previously cited.

Applicant respectfully traverses the rejections.

Claim 49 is amended to include that the inductor includes a conductive path that is formed to have a substantially helical path. The substantially helical path is accomplished by forming lower conductive lines slantly longitudinal in the semicircular groove and by further forming upper conductive lines (connecting to the lower conductive lines) slantly longitudinal over the semicircular groove and slanting at an angle opposite to the lower conductive lines. The substantially helical path is shown in FIGS. 6B, 12B, 13B, and 18B of the present application.

As explained above, JP '406 does not disclose lower conductive lines formed slantly longitudinal to the groove. Thus, the path of the wiring layers 3 and 5 follow a path that is less than substantially helical. As exemplified by FIG. 1, Yamada also discloses first conductive passage 21 being formed in a direction 90 degrees to the longitudinal direction of recess 11. Thus, the path of the conductive passages 21 and 22 also follow a path that is less than substantially helical.

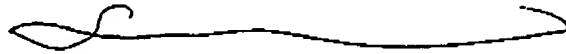
Consequently, the combination of JP '406 and Yamada fails to disclose each and every element of amended claim 49. Thus, claim 49 is believed to be allowable and the applicant respectfully requests allowance of this claim.

Conclusions

For the foregoing reasons, reconsideration and allowance of claims 1-15, 25-27, 29-40, and 49-51 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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